

KRAKAN, IN. A.

R. Protas, In. A. Krakan, and P. Kh. Pruss, "The sensitivity of photographic layers and the dimensions of emulsion crystals," P. 824.

Investigations were made on the influence of the concentration of silver bromide, ammonia and potassium bromide at the moment of formation of the dispersion phase upon the dimensions of the crystals and upon the sensitivity of the layer. It is established that they depend differently on the conditions of the synthesis of emulsions.

The State Optical Inst. of Leningrad (Order of Lenin) December 9, 1947

SO: Journal of Applied Chemistry (USSR) 21, No. 8, August (1948)

KRAKATISHA, V.V. [Krakatysha, V.V.]

Distribution and abundance of larvae and fry of the mullet *Mullus barbatus ponticus* Essigov in the hyponeuston of the Black Sea.  
Nauk.sop.Os.bioJ.sta. no.53:102-103 '64.

(MIRA 18:1)

KRAKAU, K. A.

Diagram of equilibrium of the system:  $PbO-SiO_2$ . K. A. KRAKAU AND N. A. VAKHRAPEY. *State Optical Inst. (Leningrad)*, 76; *Kerch. i. Steklo*, 8, No. 1, 42-3 (1932).—The authors investigated the melting diagram of the  $PbO-SiO_2$  system in the limits 0-72 mol. %  $SiO_2$ . The orthosilicate  $2PbO \cdot SiO_2$  and the metasilicate  $PbO \cdot SiO_2$  exist as definite chem. compds. and crystallize, the former at  $740^\circ$ , and the latter at  $785^\circ$ . A polymorphic conversion exists at  $600^\circ$  for the orthosilicate  $2PbO \cdot SiO_2$ . A eutectic exists between the ortho- and metasilicates at a temp. of about  $700^\circ$ . The crystal and optical investigation showed the existence of the silicate  $3PbO \cdot SiO_2$ , which is in a metastable state at temps. lower than  $600^\circ$ . The  $3PbO \cdot SiO_2$  forms eutectics also. The  $PbO \cdot SiO_2$  has a eutectic with  $SiO_2$  at about  $700^\circ$ . Data on the optical properties are given. Forms of tridymite and cristobalite were found during the crystn. of silicates from glasses contg. 60-70%  $SiO_2$ . Two kinds of thermal effects were observed during the study of the  $PbO-SiO_2$  system in the vitrified state: (1) the exothermic effect connected with the mol. conversion into the vitrified state and (2) the endothermic effect connected with crystn. of definite compds.

M. V. KONDOVY

KRAKAU, K. A.

Scientific research work on glass of the Russian State Optical Institute. K. A.  
KRAKAU AND N. A. SHALBEROV. *Keram. i Staklo* 8, No. 11, 24-8 (1932). M. V. K.

CLASSIFICATION

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

EXHIBIT INDEX

COMMON ELEMENTS										COMMON VARIANTS									
COMMON ELEMENTS										COMMON VARIANTS									
<p><b>19</b></p> <p><b>Fusion diagram of ternary system <math>\text{Na}_2\text{SiO}_3\text{-PbSiO}_3\text{-PbO}</math>. K. A. Krukau. <i>Ann. sector anal. phys. chim., Inst. chim. gen.</i> (U. S. S. R.) 8, 831-80(1986). Study of the compn. and properties of optical glasses began with the fusion diagram of the ternary system: <math>\text{Na}_2\text{SiO}_3\text{-PbSiO}_3\text{-PbO}</math>. It was prepd. by melting a mixt. of powd. pure quartz with Kahlbaum <math>\text{Na}_2\text{CO}_3</math> and <math>\text{PbO}</math> in a Pt crucible. The thermal study of the fusion diagram comprised the curves of heating, cooling and liquidus, obtained by the static method of detg. equilibria. The melts were crysd. and their optical and crystallographic properties were microscopically examd. From the temps. of crysta. of all the melts, it was possible to construct the fusion isotherms, taken mostly at intervals of <math>50^\circ</math>. On the basis of the microscopic examn. of the sepd. crystals, the entire system can be divided into 5 crysta. fields, corresponding to the compds. <math>\text{Na}_2\text{O.SiO}_2</math>, <math>\text{PbO}</math>, <math>3\text{PbO.SiO}_2</math>, <math>2\text{PbO.SiO}_2</math> and <math>\text{PbO.SiO}_2</math>. The borders of these fields are divided by lines descending to the lowest point of the compn. in mol. percentage: <math>\text{SiO}_2</math> 80, <math>\text{PbO}</math> 32.5 and <math>\text{Na}_2\text{O}</math> 17.5, and the m. p. <math>570^\circ</math>. The crysta. field of <math>\text{Na}_2\text{O.SiO}_2</math> is greater than the other fields, and is shaped like a conical surface with the summit in the point of the metasilicate (m. p. <math>1088^\circ</math>). From the summit the surface descends into the direction of increased <math>\text{PbO}</math> content at first somewhat slowly, and then, nearer to the eutectic line, very abruptly.</b></p>										<p>At the borders of the system (lines <math>\text{Na}_2\text{O-Na}_2\text{O.SiO}_2</math> and <math>\text{PbO.SiO}_2\text{-Na}_2\text{O.SiO}_2</math>) the descent is not so sharp, but, because of this descent in the direction of the center line, a more elevated part of surface (a hump) is obtained. Next in the magnitude is the crysta. field of <math>\text{PbO}</math>, including a sector whose character of fusion equilibria is not fully clarified. On the line <math>\text{PbO-Na}_2\text{O.SiO}_2</math> and the nearest one for a considerable length, the crysta. temps. differ very little from each other. The remaining sector of this field represents a surface descending to a line of division from the highest point <math>\text{PbO}</math> (m. <math>885^\circ</math>). The crysta. field of <math>3\text{PbO.SiO}_2</math> is indicated only approx. Doubtless it is not very large and corresponds to this compd. The crysta. fields of <math>2\text{PbO.SiO}_2</math> and <math>\text{PbO.SiO}_2</math> are approx. equal and do not reach to the center of the diagram (in the direction of decreasing <math>\text{PbO}</math> contents). The highest points in these fields are formed by the definite compds. of <math>2\text{PbO.SiO}_2</math> (m. <math>746^\circ</math>) and <math>\text{PbO.SiO}_2</math> (m. <math>705^\circ</math>). Chas. Blanc</p>									
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>										<p>RESEARCH</p>									
<p>RESEARCH</p>										<p>RESEARCH</p>									

1ST AND 2ND QND(S) PROCESSES AND PROPERTIES INDEX 3RD AND 4TH COLS(1)

2

CRACKAU, K. A.

Equilibrium diagram of the ternary system  $\text{Na}_2\text{SiO}_3\text{-PbSiO}_3\text{-SiO}_2$ . K. A. Crackau, B. J. Mukhin and M. S. Heinrich. *Compt. rend. acad. sci. U. R. S. S.* 14, 281-3 (1937) (in English); cf. C. A. 30, 6147<sup>2</sup>.—The system was studied by both the static and optical methods. The binary compds. shown to exist are  $\text{Na}_2\text{O} \cdot \text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 4\text{SiO}_2$ , following ternary compds. were found:  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 4\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 6\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 3\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 7\text{SiO}_2$ , and  $3\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 11\text{SiO}_2$ , m. 1098<sup>2</sup>, 876<sup>2</sup> and 760<sup>2</sup>, resp. The  $\text{SiO}_2$  and  $\text{PbO} \cdot \text{SiO}_2$ , m. 1098<sup>2</sup>, 876<sup>2</sup> and 760<sup>2</sup>, resp. The following ternary compds. were found:  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 4\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 6\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 3\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 7\text{SiO}_2$ , and  $3\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 11\text{SiO}_2$ , m. 1098<sup>2</sup>, 876<sup>2</sup>, 760<sup>2</sup> and 645<sup>2</sup>, resp. Cryst. form, system, cleavage, n and optical sign are given for each ternary compd.; the ternary diagram is also given. E. G. Vanden Bovele

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

82-111 24 QND 151

19

Effect of germanium oxide admixtures on the optical properties of glass. K. A. Kravak. *Optiko-Mekhan. Prom.* 9, No. 4, 15-17 (1939). Literature and exper. data show that the partial or total replacement of silica by  $\text{GeO}_2$  in glass increases the index of refraction and dispersion. Lab. meltings in Pt crucibles of 6 different glasses in which silica was partially replaced by  $\text{GeO}_2$  and some other changes were made in their compn. increase in  $\text{SiO}_2$  showed that: (1) the replacement of  $\text{SiO}_2$  by  $\text{GeO}_2$  lowers the chemical stability of glasses; (2) viscosity of glasses is considerably diminished by the introduction of  $\text{GeO}_2$ , and less time is required for melting the glass, and purification is facilitated. M. V. Kondrat

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

UNCLASSIFIED

KRAKAU, K. A. and others

Fiziko-khimicheskiye svoystva troynoy sistemy-okis' natriya-okis' avintsa-kremnezem.  
Moscow 1949. 219 p.

Collection of articles on equilibrium, viscosity, electric conductivity, density,  
etc., of above mentioned compounds; published by Academy of Sciences, USSR.



CA 518581, 5-11

Physicochemical properties of the ternary system of sodium oxide, lead oxide, and silica. Introduction. K. A. Krakau (Institute of Akad. Nauk, Moscow or Leningrad). *Akad. Nauk S.S.S.R., Otdel. Khim. Nauk, Acad. Nauk S.S.S.R. i Gosdarn. Ordena Lenina Opticheskiy Inst., Sverdlsk State 1946, 3-14. Equilibrium diagram of the system Na<sub>2</sub>O-PbO-SiO<sub>2</sub>. K. A. Krakau, R. Ya. Mukhin, and M. S. Gennikh. *Ibid.* 18-38; cf. C.A. 31, 6956. — Silic. compds. form in the system Na<sub>2</sub>SiO<sub>3</sub>-PbO-SiO<sub>2</sub>. They are*

Na<sub>2</sub>O 2PbO (I) (II), m. 630°, orthorhombic needles, perfect cleavage,  $n = 1.714$  and  $1.782$ ; Na<sub>2</sub>O 3PbO 6SiO<sub>2</sub> (III), m. 717°, tetragonal prisms, no cleavage,  $n = 1.704$  and  $1.707$ ; Na<sub>2</sub>O 2PbO 6SiO<sub>2</sub> (III) which transforms into (II) at 640°; orthorhombic bipyramids, moderate cleavage,  $n = 1.716$  and  $1.744$ ; Na<sub>2</sub>O 2PbO 3SiO<sub>2</sub> (IV), m. 615°, monoclinic, perfect cleavage,  $n = 1.601$  and  $1.700$ ; Na<sub>2</sub>O 3PbO 7SiO<sub>2</sub> (V), m. 725°, hexagonal, moderate cleavage,  $n = 1.720$  and  $1.750$ ; and 3Na<sub>2</sub>O 3PbO 11SiO<sub>2</sub> (VI) (VII), m. 615°, monoclinic prisms, perfect cleavage,  $n = 1.617$  and  $1.681$ . The liquidus temp. of the central part of the system is low (570-760°). Ternary eutectics are at (a) 670°; Na<sub>2</sub>O 4.5, PbO 85.0 mol %; solid phases PbSiO<sub>3</sub> and II; (b) 690°; Na<sub>2</sub>O 13.5, PbO 85.0 mol %; solid phases PbSiO<sub>3</sub>, I, and II; (c) 575°; Na<sub>2</sub>O 19.0, PbO 80.0%; solid phases Na<sub>2</sub>SiO<sub>3</sub>, Na<sub>2</sub>SiO<sub>3</sub>, and IV; (d) 670°; Na<sub>2</sub>O 16.5, PbO 29.5%; solid phases Na<sub>2</sub>SiO<sub>3</sub>, I, and IV; (e) 610°; Na<sub>2</sub>O 17.0, PbO 22.5%; solid phases I, II, and VI; (f) 570°; Na<sub>2</sub>O 17.0, PbO 38.0%; solid phases PbSiO<sub>3</sub>, IV, and Na<sub>2</sub>SiO<sub>3</sub>; and (g) 580°; Na<sub>2</sub>O 10.0, PbO 62.5%; solid phases PbSiO<sub>3</sub>, PbSiO<sub>3</sub>, and Na<sub>2</sub>SiO<sub>3</sub>. Also the temp. and compn. of 7 transition points are given. When a glass melt is cooled below the solidus temp., cryst. compds. form in the same order as when the melt is cooled very slowly. Crystn. is difficult, i.e. danger of devitrification is small, when the glass has a compn. near the eutectics (a), (d), or (e), near VI, or near Na<sub>2</sub>O 16, PbO 18%. Viscosity of glasses of the system Na<sub>2</sub>SiO<sub>3</sub>-PbSiO<sub>3</sub>-SiO<sub>2</sub> in the region of high temperatures. *Ibid.* 39-60; cf. C.A. 36, 6403. Vis. M. M. Skorniyakov. *Ibid.* 39-60; cf. C.A. 36, 6403. Viscosity of glasses of the system Na<sub>2</sub>O-PbO-SiO<sub>2</sub> in the region of softening temperatures. B. A. Puzelov and K. S. Ryastrop'ev. *Ibid.* 70-82; cf. C.A. 36, 323. Electrical conductivity of glasses of the system Na<sub>2</sub>SiO<sub>3</sub>-PbSiO<sub>3</sub>-SiO<sub>2</sub> at high temperatures. K. S. Ryastrop'ev. *Ibid.* 83-109; cf. C.A. 32, 3272. The cond.  $\kappa$  of about 40 glasses between 650 and 1300° was found. The lines of equal  $\kappa$  plotted in the triangular diagram Na<sub>2</sub>SiO<sub>3</sub>, PbSiO<sub>3</sub>, and SiO<sub>2</sub> form curves convex to the Na<sub>2</sub>SiO<sub>3</sub> corner. Na<sub>2</sub>SiO<sub>3</sub> has  $\kappa$  of 1.30 ohm<sup>-1</sup> cm<sup>-1</sup> at 700° and 2.0 at 1000°; PbSiO<sub>3</sub> has  $\kappa$  of 0.0081 at 700° and 0.105 at 1150°; Na<sub>2</sub>PbSiO<sub>3</sub> has  $\kappa$  of 0.010 and 0.735 at 650° and 1300°, resp., etc. Generally,  $\kappa$  is greater, the higher is the Na<sub>2</sub>O content of the melt. When, in the ternary system, the content  $C$  of one of the components is varied,  $\kappa$  varies according to  $\log \kappa = a + bC$ .  $a$  and  $b$  are const. This formula is not valid for the binary systems Na<sub>2</sub>SiO<sub>3</sub>-SiO<sub>2</sub> and PbO-SiO<sub>2</sub>. The dependence of  $\kappa$  on compn. is different from the relation between compn. and viscosity. The numerical results are different from those of Babcock, since B. disregarded the dependence of the cell const. on  $\kappa$ . This dependence was studied by R. who used several standard aq. solns. The cell was made up of a refractory U tube and Pt electrodes. Electrical volume and surface conductivity of glasses of the system PbSiO<sub>3</sub>-Na<sub>2</sub>SiO<sub>3</sub> at room temperature. L. Yu. Kurits. *Ibid.* 110-22; cf. C.A. 37, 2240.

General & Physical  
Chem.

Over

[illegible]

the system  $\text{Na}_2\text{O}-\text{PbO}-\text{SiO}_2$ . N. A. Vakhrameev. *Ibid.* 139-46.—An endothermal effect occurs in glasses whose compn. in the  $\text{Na}_2\text{O}-\text{PbO}-\text{SiO}_2$  triangle is limited by the line from  $\text{PbO}$  to  $\text{Na}_2\text{SiO}_3$  and the line of  $\text{SiO}_2$  70 mol. %. The lower limit of this effect is 32% near  $\text{PbSiO}_3$  and 48% for  $\text{Na}_2\text{O}$  and 21 mol. % for  $\text{PbO}$  (40 mol. %). The upper temp. limit is 2180° higher. This effect is caused by mol. transformations. An exothermal effect occurs in glasses between the line  $\text{PbO}-\text{Na}_2\text{SiO}_3$  and the line  $\text{SiO}_2$  45 mol. %. The temperature at which this effect is strongest is low (181° for  $\text{Na}_2\text{PbSiO}_3$  and high (710° for  $\text{Na}_2\text{O}$  25.2,  $\text{PbO}$  16.5%). This effect is due to crystn. of silicates. Another endothermal effect occurs in glasses contg. 20-60%  $\text{SiO}_2$ , 30-70%  $\text{PbO}$ , and 0-30%  $\text{Na}_2\text{O}$ ; it may be due to melting of the eutectic. A weak endothermal effect is observed in glasses contg. more  $\text{SiO}_2$  30-40,  $\text{PbO}$  18-25% exhibited a second (weak) exothermal effect due, perhaps, to crystn. of  $\text{PbO}$ . X-ray study of glasses of the system  $\text{Na}_2\text{O}-\text{SiO}_2$ . N. N. Valenkov and R. A. Poraf-Koshits. *Ibid.* 147-57; cf. C.A. 31, 2848. Di-  
electric losses in glasses of the system  $\text{Na}_2\text{O}-\text{PbO}-\text{SiO}_2$  at high frequencies. A. A. Khar'kov. *Ibid.* 158-61.—The loss angle  $\delta$  at room temp. was independent of frequency between  $17 \times 10^3$  and  $1.1 \times 10^6$  sec<sup>-1</sup>. At room temp. in the binary system  $\text{PbSiO}_3-\text{Na}_2\text{SiO}_3$ ,  $\delta$  decreased from 8.6 min. to 2.8 for  $\text{PbSiO}_3$  to 3.3 for  $\text{Na}_2\text{O}$  (0,  $\text{PbO}$  35 mol. % and rose again to 2.8 for  $\text{Na}_2\text{SiO}_3$ . The compn. corresponding to min.  $\delta$  was near  $\text{Na}_2\text{PbSiO}_3$ . In glasses contg. 28.8 mol. %  $\text{PbO}$ ,  $\delta$  was independent of compn. between 0 and 11%  $\text{Na}_2\text{O}$  and increased with Na content between 12 and 21%  $\text{Na}_2\text{O}$ . At

General Physical Chem - 2

higher temp. the relation between  $\delta$  and compn. was similar but  $\delta$  was greater and the curvature more pronounced. Thus,  $\delta$  for  $\text{Na}_2\text{O}$  17,  $\text{PbO}$  28% was 5.4 at 20°, about 12 at 300°, about 25 at 250°, and about 55 at 300°, while  $\delta$  for  $\text{Na}_2\text{O}$  17.2,  $\text{PbO}$  28.6% was 4.5, about 12, about 30, and about 100 at 20°, 200°, 250°, and 300°, resp.; all for the frequency of  $42 \times 10^8$ . The increase of  $\delta$  with temp. was less the greater the frequency; e.g., at 250° the glass  $\text{Na}_2\text{O}$  17,  $\text{PbO}$  25% had  $\delta$  of 3.5 at  $15 \times 10^8$  sec.<sup>-1</sup> and 12 at  $13 \times 10^8$  sec.<sup>-1</sup>. Spectra of combination scattering of two-component silicate glasses. M. P. Vuk's and V. A. Ioffe. *Ibid.* 164-70; cf. C.A. 34, 6782. Study of the combination scattering spectra of three-component silicate glasses. V. A. Ioffe. *Ibid.* 171-3. Four glasses contg.  $\text{Na}_2\text{O}$  14-30,  $\text{PbO}$  29-10, and  $\text{SiO}_2$  57-84 mol. % were examd. They showed 5 Raman lines at 500 (as in  $\text{PbSiO}_3$ ), 610, 700 (both belonging to  $\text{SiO}_2$ ), 100 (as in  $\text{PbSiO}_3$ ), and 1210 cm.<sup>-1</sup> (characteristic for Na-Pb silicates). Heat of dissolution in hydrofluoric acid of molten mixtures of  $\text{Na}_2\text{O}$  and  $\text{SiO}_2$  in glassy and crystalline states. K. S. Krutop'ev and M. M. Shornyakov. *Ibid.* 174-81. Na silicates contg. x mol. %  $\text{Na}_2\text{O}$  were used as (a) crystals, (b) glasses quenched from 1200° to room temp. in Hg, and (c) annealed glasses. The heat (cal.) of dissolution of 1 g. in 40% HF was 718 (a) and 700 (b) for x = 52.5%; 694 (a) and 702 (b) for 60%; 690 (a) and 760 (b) for 48.4%; 690 (a), 687 (b), and 682 (c) for 37.5%; 650 (a), 700 (b), and 682 (c) for 33.4%; 671 (b) and 667 (c) for 27%; 678 (b) and 660 (c) for 23%; and 600 (a) for quartz and 648 for quartz glass. The difference between (b) and (a) is the heat of glass formation. It is larger

for  $\text{Na}_2\text{SiO}_3$  (11.0 cal./mol.) than for  $\text{SiO}_2$  (2.07 cal./mol.) probably because the  $\text{Na}_2\text{SiO}_3$  is partly dissociated. The heats were detd. in an isothermal calorimeter of  $\text{PbCl}_2$  at heats were detd. in an isothermal calorimeter of  $\text{PbCl}_2$  at its m.p. (24.5°) and calcd. from the vol. change caused by the melting of  $\text{PbCl}_2$ . Heats of solution in hydrofluoric acid of molten mixtures of  $\text{PbO}$  and  $\text{SiO}_2$  in glassy and crystalline states. K. S. Krutop'ev and M. M. Shornyakov. *Ibid.* 182-5. The heat Q of dissolution of cryst. (a), glassy (b), and glassy annealed (c)  $\text{PbO}$  (60, 80, 40 mol. % quenched (b), and glassy annealed (c)  $\text{PbO}$  (60, 80, 40 mol. % in 40% HF was 180, 202, and 181 cal./g., resp. For  $\text{PbO}$  33% it was 200 (a), 230 (b), and 210 (c); for 50%  $\text{PbO}$  222, 244, and 235; for 47%  $\text{PbO}$  227, 235, and 243; and for 40%  $\text{PbO}$  234, 268, and 258, resp. Contrary to Na silicates, Q increased with the  $\text{SiO}_2$  content. The heat of glass formation in  $\text{PbSiO}_3$  was -5.9 cal./mol. The heat of formation of cryst.  $\text{PbSiO}_3$  from glassy  $\text{SiO}_2$  and cryst.  $\text{PbO}$  was -7.56 cal./mol., i.e. neg., contrary to literature data. Temperature changes of the refractive index of glasses of the system  $\text{Na}_2\text{O}-\text{SiO}_2$  below 300°. N. A. Tikhonovskaya. *Ibid.* 186-200. Glass plates (10 x 5 x 1.5 mm.) were heated to 180-200° until their refractive index n was const. (i.e. for about 4 min.) and ejected in a glycerol or petrolatum bath of 15°; then their n was detd. in a polarization interferometer

muc

In comparison with identical plates not subjected to heat-treatment. Heat-treatment had no effect on  $n$  of the glass (I)  $\text{Na}_2\text{O}$  32.4,  $\text{SiO}_2$  63.5,  $\text{R}_2\text{O}$  4.1 mol. %. Glasses made of  $\text{Na}_2\text{O}$  20.0,  $\text{SiO}_2$  71.0,  $\text{R}_2\text{O}$  2.1% (glass II) and  $\text{Na}_2\text{O}$  18.0,  $\text{SiO}_2$  70.4,  $\text{R}_2\text{O}$  1.7% (glass III) showed  $n$  decreasing when  $T$  increased. Between 20° and 280° they had 3 regions of const.  $n$  and 3 regions of  $n$  decreasing on a temp. increase. The latter were observed between 85 and 120°, 140 and 165°, and 180 and 210°, i.e. near the transformation temps. of tridymite (117 and 161°) and cristobalite (210-240°). III, which had more  $\text{SiO}_2$  not bound by  $\text{Na}_2\text{O}$  than had II, showed greater changes than II, thus the decrease of  $n$  after treatment at 210-280° was  $185 \times 10^{-4}$  for III and  $150 \times 10^{-4}$  for II. I, which contained no free  $\text{SiO}_2$ , had an invariable  $n$ . Heat-treatment of  $\text{SiO}_2$  glass had no effect on  $n$  below 210°, but between  $T = 210^\circ$  and  $230^\circ$   $n$  decreased by  $70 \times 10^{-4}$ ; this decrease remained const. at higher  $T$  up to 300°. This effect was caused by transformation of cristobalite. Between  $T = 140$  and  $165^\circ$ ,  $n$  after a shorter (1-2 min.) heat-treatment of II and III was smaller (by about  $20 \times 10^{-4}$ ) than after longer treatment (4 min.). The cause of this min. is unknown. Temperature changes of the refractive index of glasses of the systems  $\text{Na}_2\text{O}-\text{SiO}_2$  and  $\text{PbO}-\text{SiO}_2$ , N. A. Tudorovskaya. *Ibid.* 201-10. The  $n$  of the glass  $\text{Na}_2\text{O}$  37.5,  $\text{SiO}_2$  62.5 mol. % decreased when the temp. of measurement increased; the total decrease from 20° to 430° was approx.  $7 \times 10^{-4}$ . Between 430 and 460°  $n$  decreased rapidly (by approx.  $5 \times 10^{-4}$ ). The  $n$  of  $\text{Na}_2\text{O}$  33.3,  $\text{SiO}_2$  66.7% behaved similarly, but the rapid decrease of  $n$

occurred between 410 and 450°. On the contrary, glasses contg. free  $\text{SiO}_2$  had  $n$  first increasing with temp.; thus  $n$  of  $\text{Na}_2\text{O}$  27,  $\text{SiO}_2$  73% was at 430° by  $4 \times 10^{-4}$  greater than at 20°; between 430 and 485° the  $n$  rapidly decreased. The  $\text{Na}_2\text{O}$  23,  $\text{SiO}_2$  77% glass had  $n$  increasing between 20° and 450° more rapidly than the previous glass as it had more free  $\text{SiO}_2$ ; its region of rapid decrease of  $n$  was between 450 and 515°. Pb silicates had  $n$  first rapidly increasing with temp., the increase being more rapid the higher the Pb content. Thus the  $\text{PbO}$  50,  $\text{SiO}_2$  50% glass had  $n$  at 431° by  $75 \times 10^{-4}$  greater than at 20°. The region of rapid decrease of  $n$  was between 400 and 430° for this glass, 400 and 400° for  $\text{PbO}$  40,  $\text{SiO}_2$  60%, and 400-405° for  $\text{PbO}$  35,  $\text{SiO}_2$  65%. At temps. above this region the glasses became too soft for exact measurement of  $n$ . Relation between the equilibrium diagram and the physicochemical properties of glasses in the system  $\text{Na}_2\text{O}-\text{PbO}-\text{SiO}_2$ , K. A. Krakau. *Ibid.* 211-19. If some graphs given in the previous papers are redrawn, it is seen that the viscosity in the system  $\text{Na}_2\text{O}-\text{SiO}_2$  (liquid) has a kink or a hump near the compn.  $\text{Na}_2\text{Si}_2\text{O}_5$ , in the system  $\text{PbSiO}_3-\text{Na}_2\text{Si}_2\text{O}_5$  a kink near  $2\text{PbSiO}_3$ ,  $\text{Na}_2\text{Si}_2\text{O}_5$ , in the system  $\text{PbSiO}_3-\text{Na}_2\text{Si}_2\text{O}_5$  a kink near  $\text{Na}_2\text{Si}_2\text{O}_5$ ,  $2\text{PbSiO}_3$ , and the compn.  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 7\text{SiO}_2$  has a max. of  $\eta$ . The presence of compl.  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 4\text{SiO}_2$  is visible on the curves of  $\eta$  against compn. in the annealing range. The elec. cond. has minima at  $\text{Na}_2\text{O} \cdot \text{PbO} \cdot 3\text{SiO}_2$ ,  $\text{Na}_2\text{O} \cdot 2\text{PbO} \cdot 4\text{SiO}_2$ , and  $\text{Na}_2\text{O} \cdot 3\text{PbO} \cdot 7\text{SiO}_2$ . Thus, presence of chem. compls. can be detected also above their m.pn. J. J. Bikerman

NIKITIN, A.I., prof., otv.red.; DOBYCHIN, B.D., prof., zam.otv.red.;  
 ABRAMOV, K.T., kand.med.nauk, red.; KAZANTSEV, A.I., prof.,  
 red.; TIMOFEYEV, S.I., prof., red.; KHODOS, Kh.B., prof., red.;  
 BOLOTOV, M.P., prof., red.; SHERSHNEV, P.A., prof., red.;  
 VAYS, S.I., prof., red.; KLIMOV, K.A., dotsent, red.; SEMENOV,  
 V.V., dotsent, red.; DONGSKOV, V.V., dotsent, red.; KARNAKOV,  
 B.I., dotsent, red.; KRAKAU, S.I., red.

[Collection of works of the Irkutsk State Medical Institute  
 devoted to its 40th anniversary] Sbornik trudov Irkutskogo  
 gosudarstvennogo meditsinskogo instituta, posviashchennyi  
 40-letiiu so dnia ego osnovaniia. Irkutsk, 1959. 442 p.

(MIRA 14:1)

1. Russia (1917- R.S.F.S.R.) Ministerstvo zdarvoookhraneniya.
2. Zaveduyushchiy kafedroy normal'noy fiziologii Irkutskogo  
 meditsinskogo instituta (for Nikitin). 3. Zaveduyushchiy fakul'-  
 tetskoy khirurgicheskoy klinikoy Irkutskogo gosudarstvennogo medi-  
 tsinskogo instituta (for Dobychin). 4. Zaveduyushchiy kafedroy bio-  
 khimii Irkutskogo meditsinskogo instituta (for Shershnev). 5. Za-  
 veduyushchiy kafedroy propedevtiki vnutrennikh bolezney Irkutskogo  
 meditsinskogo instituta (for Karnakov).

(MEDICINE)

SHORYGIN, Andrey Pavlovich; KRAKAU, T.K., dots., retsenzent;  
GOMOYUNOV, K.K., retsenzent; DANILOVA, V.V., red.

[Magnetic elements of computers] Magnitnye elementy vychislitel'nykh mashin. Moskva, Vysshaya shkola, 1965.  
335 p. (MIRA 18:11)

1. Leningradskiy politekhnicheskoy institut im. M.I.Kalinina  
(for Krakau). 2. Kafedra inzhenernoy elektrofiziki Moskovskogo  
energeticheskogo instituta im. Molotova (for Gomoyunov).

GOMOYUNOV, Konstantin Konstantinovich; KRAKAU, T.K., red.

[Digital components; manual for a course in "Elements of digital devices"] Elementy diskretnogo deistviia; uchebnoe posobie po kursu "Elementy ustroistv diskretnogo deistviia". Leningrad, Leningr. politekhn. in-t im. M.I.Kalinina, 1965. 270 p. (MIRA 18:12)

KRAKAU, V.N.

LEVITIN, E. A., GIRSHGORN, Sh. I., KRAKAU, V. N., and PEVTSOV, V. P.

"Radio-Receivers", published by State Cooperative Publishers, Moscow, 1949



CA KRAKAU, Yu.A.

The resolving power of photographic layers and the dimensions of the emulsion crystals. I. R. Protas, Yu. A. Krakau, and P. Kh. Pruss. *Zhur. Priklad. Khim.* (Appl. Chem.) 21, 824-30 (1948); cf. following abstr. Particle size distribution, photographic sensitivity  $S$ , contrast coeff.  $C$ , log  $d$ , and resolving power  $R$ , were detd. for 4 series of emulsions, the 1st 2 prepd. with, the other 2 without,  $\text{NH}_4$ . The compns. of the layers immediately after emulsification were in series I, gelatin 5%, AgBr 0.075 mol./l., KBr and  $\text{NH}_4$ , 0.0075 and 0.015, 0.075 and 0.15, 0.75 and 1.50 mol./l.; II, gelatin 5%, AgBr 0.75, KBr and  $\text{NH}_4$ , as in I; III, gelatin 1.0%, AgBr 0.3, KBr 0.015, 0.075, 0.375 mol./l.; IV, gelatin 1.0%, AgBr 3.0, KBr as in III. After ripening, and before pouring, emulsions I and II contained 12% gelatin, AgBr 0.15 mol./l., III and IV, 0.25% gelatin, AgBr 0.33 mol./l. Microscopic dispersion analysis showed that, at const. AgBr concn., the increase of its soly. at the moment of emulsification, brought about by increased concn. of  $\text{NH}_4$  or KBr or both, results in increased crystal size, and, at the same time, increased  $S$  and decreased  $C$ . However, the accepted and expected concomitant decrease of  $R$  was observed only in series I and III, i.e. when AgBr was pptd. from dil. solns., not in II or IV, where  $R$  varies very little despite the great variation of the mean grain cross-section, 0.07-0.7  $\mu^2$  in II and 0.20-1.21  $\mu^2$  in IV. Grain

size distribution curves of emulsions prepd. with close concns. of  $\text{NH}_4$  and KBr are similar. In I and II,  $S$  increases with the grain size, the 2 series showing differences only in the case of coarse emulsions; among these, emulsions in which AgBr was pptd. from a larger vol. have the greater  $S$ . In III and IV,  $S$  increases only very slightly with the grain size, and the curves of  $S$  as a function of the grain size are almost identical for the 2 series.  $C$  falls with increasing grain size, faster in I and II than in III and IV. At equal compn. of the medium,  $C$  is the lower, the smaller the vol. from which AgBr was pptd. Under otherwise identical conditions,  $R$  is substantially higher in I and III than in II and IV, and the difference is the more marked the finer the grain of AgBr. The grain size is mainly detd. by the concn. of  $\text{NH}_4$  and KBr in the emulsion, but is in no way significantly affected by the vol. from which AgBr is pptd., i.e. by the very factor which has a detg. influence on  $R$ . This refutes the generally accepted direct relation between small grain size and high  $R$ . It is possible to prep. emulsions of identical grain size and widely different  $R$ , or emulsions of different grain size and identical  $R$ . S. Thon

Leningrad State Optical Inst

*Photographic  
Abstracts*

*Sensitizing and Sensitometry*

1137 771.534.553 : 77.021.11  
**Resolving Power of Photographic Layers and the Dimensions of Emulsion Crystals.**  
 I. R. PROITAS, Y. A. KRAKAU and P. K. PRUSS. *J. Appl. Chem. (U.S.S.R.)*,  
 21, 824-833, 1948.—The resolving-power values for a series of twelve different  
 silver bromide photographic emulsions were obtained. Six of the emulsions  
 were prepared with ammonia, and six were prepared without ammonia. Each  
 of these types of emulsions was prepared with both high and low silver bromide

concentration, when the dispersion phase was formed. The grain size in each  
 of these four different groups of emulsions was varied by altering the conditions  
 of ripening. It was found that a higher value of resolving power was obtained  
 in the case where the silver bromide concentration was low during precipitation  
 than when the silver bromide concentration was high during precipitation.  
 In the case of the emulsions made up with a low silver bromide concentration  
 during precipitation, the resolving power varied inversely with the grain size,  
 but in the case where the concentration of silver bromide was high during  
 precipitation, the resolving power was considerably below that obtained in  
 the other case, and was approximately constant and independent of grain  
 size. The presence or absence of ammonia made no significant difference in  
 the resolving-power values which were obtained.

*Mon. Abs. Bull. Kodak Res. Labs.*

1949-50

KRAKAU, Yu. A.

"The Size and Form of Crystals of a Silver Halide in Photographic Emulsions," Zhur. peik. khim., 22, No.8, 1949

KRAKAU, Yu. A.

"Thickness of Emulsion Crystals and Resolving Power of Photographic  
Emulsions," Zhur. pril. fiz., 22, No.9, 1949



PROTAS, I. R., KRAKAU, Yu. A. and SIDORENKOVA, P. T. (USSR)

"Etude de La Sensibilisation Chimique Des Emulsions Nucleaires."

paper presented at the Second Intl. Colloquium on Corpuscular Photography.  
Montreal, 21 Aug - 7 Sep 1958.

Encl: B-3,114,647.

PROTAS, I.R., KRAKAU, Yu.A., SIDORENKOVA, P.T.

Role of thiocyanogen ions during the chemical sensitization of  
photographic emulsions with gold. Usp.nauch.fot. 7:87-95 '60.

(MIRA 13:7)

(Photographic emulsions) (Photographic chemistry)

27268

S/077/61/006/005/002/004  
D051/D113

21-6000 also 1051, 1227

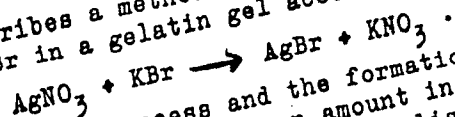
AUTHOR:

Krakau Yu. A.

TITLE:

Preparing nuclear emulsions by diffusive emulsification

PERIODICAL:

Zhurnal nauchnoy i prikladnoy fotografii i kinematografii,  
v. 6, no. 5, 1961, 345-348TEXT: The author describes a method of producing nuclear emulsions by diffusion of  $\text{AgNO}_3$  and  $\text{KBr}$  in a gelatin gel according to the formula

Subsequent to the diffusion process and the formation of silver bromide,  $\text{KBr}$  is introduced into the emulsion in an amount in which the  $\text{pBr}$  of the emulsion is equal to 2.7-2.8. In order to establish the optimum conditions for diffusive emulsification, the author studied the dependence of the amount of  $\text{AgBr}$  forming in the gel on the concentration of the diffusive solutions and the gelatin in the gel, on the thickness of the gelatin layer, and the duration of the diffusion. The results, which are shown in a table,

Card 1/3

27268

S/077/61/006/005/002/004  
D051/D113

Preparing nuclear emulsions ....

prove that the best conditions for diffusive emulsification will be obtained when 2 M of  $\text{KBr}$  and  $\text{AgNO}_3$  solutions are diffused within 5 minutes in a 3% and approximately 0.8 mm thick gelatin gel. In this case, the amount of  $\text{AgBr}$  in the layer will reach about 85%. The dispersive characteristics of the obtained emulsions were examined by electron microscopic recording of the  $\text{AgBr}$  microcrystals (linear magnification: 4000). The results of these investigations are also shown in a table. The observed phenomenon of polydispersion can be limited by introducing erythrosine into the gel. A further characteristic of the obtained emulsions is low sensitivity. They are suitable for recording heavily ionizing particles, e.g.  $\text{Po}$  alpha-particles. The results of attempts to increase their sensitivity by using sensitizers are given in another table. The author thanks A.L. Kartuzhanskiy for his help. There are 3 figures, 3 tables and 10 references: 7 Soviet and 3 non-Soviet-bloc. The 3 references to English-language publications read as follows: W. Markooki, Sci. et inds fotogr., 1959, 30, 177; J. Colomer, Ch. Shoebel, Sci. et inds fotogr., 1958, 29, 449; P. Demers, Phys. Rev., 1946, 70, 86.

Card 2/3



Preparing nuclear emulsions ....

27268

S/077/61/006/005/002/004  
D051/D113

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I.Vavilova (State  
Optical Institute im. S.I.Vavilov)

SUBMITTED: October 26, 1959

Card 3/3

PROTAS, I.R.; KRAKAU, Yu.A.

Coagulation of photographic emulsions with sodium sulfate.  
Zhur.nauch.i prikl. fot.i kin. 6 no.6:404-407 N-D '61. (MIRA 15:1)

1. Gosudarstvennyy opticheskiy institut imeni S.I. Vavilova.  
(Photographic emulsions)

KRAKES, V.

An example of handling castings in an agricultural machine factory.  
Podnik organizace 17 no.1:27 Ja '63.

KRAKES, Vladimir

Analysis of the handling of materials with regard to the kind of work and worker qualification. Tech praca 15 no.4:281-283  
Ap '63.

1. Technicko-organizačni výzkumný ústav strojírenský, Praha.

KRAKES, Vladimir

Importance of the worker's movement study for modernization of the handling of material. Podn org 18 no.5:212-215 My '64.

1. Research Institute of the Machine Industry Technology and Organization.

KRAKES, Vladimir

Handling of materials in France. Podn org 18 no.2:91-95 F'64

1. Technical and Organizational Research Institute of the  
Machine Industry.

KRAKES, Vladimir

"Handling of materials in the heavy machine industry" by  
J.Vejchoda, M.Rejman, V.Libal. Reviewed by Vladimir Krakes.  
Podn org 18 no.8:383-384 Ag '64.

KRAKES, Vladimir

Equipment for the handling of material at the 1964 Brno  
Fair. Podn org 18 no.12:554-557 D '64.

1. Research Institute of Mechanical Engineering and Economics,  
Prague.



KRAKES, Vladimir

Organization and control of handling of materials in the  
Renault Factory. Podn org 19 no.2:89-92 F '65.

1. Research Institute of Mechanical Engineering and Economics,  
Prague.

GUS'KOV, B.S.; KRAKHIN, A.G.

Wear of cutters and surface smoothness in fine boring of  
cast-iron bushings on diamond boring machines. Stan.1  
instr. 33 no.5:31 My '62. (MIRA 15:5)  
(Drilling and boring)

GUS'KOV, B.S.; KRAKHIN, A.G.; BEREZOVSKIY, G.P.

Boring bar with mechanical fastening of ceramic tips for a  
diamond boring machine. Stan.1 instr. 34 no.3:34 Mr '63.  
(MIRA 16:5)

(Drilling and boring machinery)

GUS'KOV, B.S., kand. tekhn. nauk; KRAKHIN, A.G., inzh.

Dimensional strength of hard-alloy cutting tools and surface roughness in fine boring of cast-iron parts. Mashinostroenie no.1:25-27 Ja-F '63. (MIRA 16:7)

1. Odesskiy tekhnologicheskii institut im. Lomonosova.  
(Drilling and boring)

ACCESSION NR: AP4043975

S/0121/64/000/008/0023/0024

AUTHOR: Krakhin, A. G.; Gus'kov, B. S.; Berezovskiy, G. P.

TITLE: The use of TsM332 cutting tools in fine boring

SOURCE: Stanki i instrument, no. 8, 1964, 23-24

TOPIC TAGS: boring tool, TsM332 alloy, fine boring mill, T30K4 alloy, cutting speed, cutting feed, surface finish, ceramic tip, ceramic tool

ABSTRACT: One-piece boring tools were made of TsM332 alloy by the Moskovskiy kombinat tverdy\*kh splavov (Moscow Combine of Hard Alloys). Tools, 6, 8, and 12 mm in diameter and 20 mm long, were sintered to RA 91—91.5 and were ground with a diamond wheel to:  $\psi = 60^\circ$ ,  $\psi_1 = 15^\circ$ ,  $\gamma = 3^\circ$ ,  $\alpha = 12^\circ$ ,  $\lambda = 0^\circ$ ,  $r = 0.3$  mm. In operation they were held in a boring bar 25 mm in diameter, made of steel 45. They were tested on 55 x 20 mm bushings with internal diameters of 29—35 mm, made of steel 45. It was desired these tools be compared with those made of T30K4 alloy. The tests determined tool wear at cutting speeds  $v = 200—375$  m/min, the wear at the feeds  $s = 0.015—0.075$  mm/rev, and also the

Card 1/3

ACCESSION NR: AP4043975

surface roughness obtained at the depth of cut  $t = 0.1$  mm and  $v = 320$  m/min. The wear sustained by the cutter in a given length of cut was determined indirectly by measuring the taper of the bushing hole. The thermal elongation of the tools was found to be negligible due to the short machining time. These experiments proved that, under the given conditions, the use of one-piece cutters of TsM332 alloy eliminated the losses related to brazing or mechanical fixing of standard tips and that they withstood a cutting speed twice as high as that tolerated by T30K4-alloy tools (see Figs. 1 and 2 of the Enclosure). The new tools also produced a surface finish dependent only on the tool geometry and practically independent of the cutting speed. The optimal conditions for the TsM332 tools are:  $v \sim 280-320$  m/min,  $t = 0.1$  mm, and  $s = 0.045$  mm/rev. To prevent chipping the TsM332 cutters they should be disengaged from the metal before being withdrawn from the sleeve. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00

ATD PRESS: 3083

ENCL: 01

SUB CODE: IE, MM

NO REF SOV: 003

OTHER: 000

Card 2/3

KRAKHIN, N.S.; VARAKSIN, V.N.; STUDENTSOV, V.I.

Pre-cast reinforced-concrete timbers in the mines of East Kazakhstan.  
Gor.zhur. no.3:70-71 Mr '60. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov,  
Ust'-Kamenogorsk (for Krakhin, Varaksin). 2. Lenino-shakhtostroyu-  
pravleniye (for Studentsov).

(East Kazakhstan Province—Mine timbering)

VORONIN, V.S.; KRAKHIN, N.S.; SHILKIN, P.I.; PUSTOVALOV, A.I.

Supports with a sprayed concrete foundation. Gor. zhur.  
no.1:17-22 Ja '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov, g. Ust'-Kamenogorsk (for Voronin, Krakhin, Shilkin).
2. Maslyanskiy rudnik (for Pustovalov).  
(Mine timbering) (Concrete)



BEREZOVA, Ye.; BORODULINA, Yu.; BUSHUYEVA, P.; GEL'TSER, F.; GOLIKOV, V.;  
DOROSINSKIY, L.; KOZLOVA, N.; KRAKHIN, P.; KRUGLOV, N.; LAZAREV, N.;  
LAMPOVSHCHIKOV, P.; MAKAROVA, M.; MARKOVA, Z.; NESTEROVA, Ye.;  
PROKHOROV, M.; SOROKINA, T.; STARYGINA, L.; KHUDYAKOV, Ya.

Ivan Il'ich Samoilov; obituary. Mikrobiologiya 28 no.2:318-  
319 Mr-Apr '59. (MIRA 12:5)  
(SAMOILOV, IL'IA IL'ICH, 1900-1958)

KRAKHMALEV, A., inzhener; SINITSIN, I., inzhener

Shunting crane with remote control. Mast. ug1.4 no.7:24-25 J1'55.  
(Mine railroads) (MLRA 8:10)

KRAKHMALEV, A., inzhener; SINITSA, I., inzhener.

~~XXXXXXXXXXXXXXXXXXXX~~  
Screw jack. Mast. ugl. 5 no. 7:24 J1 '56. (MIRA 919)  
(Coal mines and mining--Equipment and supplies)

KRAKHMALEV, A., inzhener; SINITSA, I.

Improve the performance of underground transportation. Mast.ugl.  
5 no.10:14-16 0 '56. (MLRA 9:12)  
(Coal handling) (Mine hauling)

OSTROVSKIY, S.B.; ~~KRAKHMALEV, A.A.~~

Improving mine haulage is an important condition for increased coal extraction. Mekh.trud.10 no.3:13-17 Mr '56. (MLRA 9:7)

1.Ministerstvo ugol'noy promyshlennosti USSR.  
(Mine haulage)

KRAKHMALEV, A.A., inzhener.; SINITSA, I.V., inzhener;

Safety appliances used in slope mining. Bezop.truda v prom. 1 no.3;10-  
12 Mr '57. (MLRA 10:4)

(Coal mines and mining--Safety measures)  
(Mine haulage)

~~KRAYCHIK, I. I.~~ inzhener; SINITSA, I., inzhener.

Quicker mechanization of mine surface units. Hast. uel. 6  
no. 6:6-8 Ja '57. (MLRA 10:8)  
(Coal mining machinery)

KRAKHMALEV, A.A., gornyy inzh.

Conveyor hauling of coal in inclined mine workings in the Lugansk  
Economic Region. Ugol' Ukr. 3 no.2:32-33 F '59. (MIRA 12:3)  
(Lugansk Province--Mine haulage)  
(Conveying machinery)



VIRABOV, Armenak Arkad'yevich; LEONOV, V.A., kand.tekhn.nauk, retsenzent;  
KRAKHMALEV, A.A., retsenzent; KOLOMIYTSYEV, A.D., otv.red.;  
SABITOV, A., tekhn.red.; PROZOROVSKAYA, V.L., tekhn.red.

[Operator of machines and mechanisms for underground mine haulage]  
Mashinist shakhtnykh mashin i mekhanizmov podzemnogo transporta.  
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960.  
219 p. (MIRA 13:7)

(Mining machinery)

KRAKHMALEV, A.A., gornyy inzhener

Effect of the methods and means of transportation on the  
crushing of coal. Ugol' Ukr. 5 no.12:16-18 D '61. (MIRA 14:12)  
(Coal—Transportation)

KRAKHMALEV, A.A., inzh.

Determining the degree of breaking up of run-of-mine anthracites  
in relation to the nature of breaking strains. Izv. vys. uchel.  
zav.; gor. zhur. 5 no.1:16-20 '62. (MIRA 15:4)

1. Institut gornogo dela imeni M.M.Fedorova AN USSR. Rekomendovana  
institutom gornogo dela AN USSR.  
(Coal--Testing)

KRAKHMALEV, A.A., starshiy nauchnyy sotrudnik

Study of the processes of anthracite coal breakage during its  
hauling in mines. Izv.vys.ucheb.zav.; gor. zhur. 6 no. 12:  
124-131 '63. (MIRA 17:5)

1. Institut gornogo dela AN UkrSSR imeni M.M.Fedorova.

BARINOV, A.; LYUBENKO, G.; BAGMUT, S.; VIRABOV, S.; MALIOVANOV, D.I.,  
kand. tekhn. nauk; KRAKHMALEV, A.A., kand. tekhn. nauk (Donetsk)

Concerning the book "Layout of mine buildings and strip  
mines." Ugol' 39 no.3:77-78 My'64. (MIRA 17:5)

KRAKHMALEV, A.I., inzhener

Core filter for samples of sapropels and sediments. Torf. prom. 34  
no. 2:35 '57. (MLRA 10:3)

1. Giprogor.

(Boring machinery)

KRAKHMALEV, A.I., inzhener.

Apparatus for boring test holes in bogs. Torf.prom. 34 no.5:32-33  
'57. (MIRA 10:10)

1. Giprogor.  
(Peat bogs) (Boring machinery)

KRAKHMALEV, A.I., gornyy inzh.

Stabilization of quicksands. Ugol' 35 no. 12:53-54 D '60.

(MIRA 14:1)

(Soil stabilization)



KRAKHMALEV, A.I., inzh.

"Exchange of experience between enterprises of the Economic  
Councils. Torf.prom. 37 no.4:34-35 '60. (MIRA 13:7)

1. Giprogor.

(Peat machinery)

NIKITIN, I. (Yuzhno-Sakhalinsk); SILKIN, A., obshchestvennyy kontroler;  
GARDEVA, V., inzh.-tekhnolog; KRAKHMALEV, V.; TSIMEALYUK, V., inzh.-  
tekhnolog; RADZHABLI, A. (Kirovabad)

Letters to the editor. Obshchestv.pit. no.10:44-45 0 '62.

(MIRA 15:11)

1. Otdel obshchestvennogo pitaniya Zheleznodorozhnogo upravleniya  
rabochego snabzheniya Kazakhskoy zheleznoy dorogi (for Gardeva).
2. Otdel obshchestvennogo pitaniya Kurortprodtorga, g. Nal'chik  
(for TSimbalyuk).

(Restaurants, lunchrooms, etc.)

ACC NR: AP7002393

SOURCE CODE: UR/0020/66/171/005/1201/1204

AUTHOR: Karapetyan, N. V.; Krakhmaleva, I. N.; Krasnovskiy, A. A.  
(Corresponding member AN SSSR)

ORG: Institute of Biochemistry im. A. N. Bakh, Academy of Sciences  
SSSR (Institut biokhimi Akademii nauk SSSR)

TITLE: Effect of heat inactivation on differential absorption spectra  
of purple photosynthesizing bacteria

SOURCE: AN SSSR. Doklady, v. 171, no. 5, 1966, 1201-1204

TOPIC TAGS: bacteria, chlorophyll, temperature dependence, absorption  
spectrum, fluorescence spectrum

ABSTRACT: In experiments on Rhodospseudomonas sp. and Chromatium purple  
bacteria, the effect of heat inactivation on bacteriochlorophyll was  
determined by differential absorption spectra, photosynthesis rate,  
(acetate- $C^{14}$  uptake) and absorption and fluorescence spectra. Bacterial  
suspensions in a culture medium were heated to temperatures of 40 to  
90C and then were subjected to freezing (-196C) and thawing. Differen-  
tial spectra were measured following a five sec "light period" and a one min  
"dark period." Absorption spectra were measured with an SF-10  
spectrophotometer and fluorescence spectra were measured with a

Card 1/3

UDC: 581.132

ACC NR. AF7002393

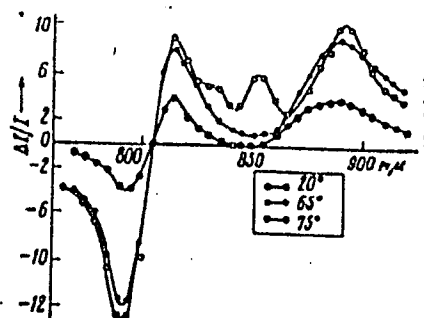


Fig. 1. Effect of heating on differential absorption spectra of light-dark changes of Rhodospseudomonas sp. purple bacteria.

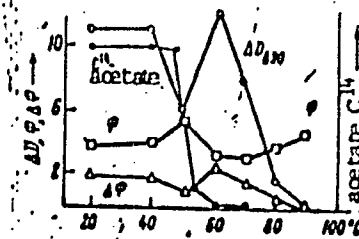


Fig. 2. Dependence of acetate- $C^{14}$  uptake rate, fluorescence intensity ( $\phi$ ), light induced absorption changes ( $\Delta D$ ), and fluorescence changes ( $\Delta \phi$ ) on heating of Rhodospseudomonas sp. bacteria.

Card 2/3

ACC NR: AP7002393

spectrofluorimeter assembled by Yu. Ye. Yerokhin in the laboratory. Findings indicate that photosynthetic activity is not affected by heating at 50C, but drops sharply at 55C and is completely depressed at 60C. At 60C the absorption and fluorescence spectra are not affected, but at 70C a change in the bacteriochlorophyll takes place as expressed by reduced absorption at 890 mμ and increased fluorescence at 910 mμ. Heating to 80C and higher produces significant absorption and fluorescence spectra changes. The differential spectra (see Fig. 1) show that the dependence of absorption changes at 790, 810, 850 and 890 mμ is complex. A possible explanation is offered for the high sensitivity of photosynthesis to heat. Heat inactivates some of the photosynthetic enzyme reactions and this leads to an accumulation of photochemically changed pigment molecules due to blocking of electron transfer chains, which in turn leads to a gradual breakdown of the pigment-protein complex and photoreactivity. The authors express their thanks to Ye. N. Kondrat'yeva for supplying the bacterial cultures. Orig. art. has: 4 figures.

SUB CODE: 06/ SUBM DATE: 29Aug66/ ORIG REF: 008/ OTH REF: 004  
ATD PRESS: 5112

Card 3/3

Kroshchinskii, L. L.

29701

Vliyeniye fitoncifidov lutsa I chyvorneta na poverzhe koshchivitsy u  
dystry. Sov. vyssh. shkol, 1989, No. 5, s. 5-8.

St: Leningrad No. 4.

KRUKHMAL'NIK, I.M.; PRITYKOVSKIY, V.I.

New design of flask for the upper half of molds. Lit. proizv.  
no.3:36 Mr '64.  
(MIRA 18:9)





KRAKHMAL'NIKOVA, G.A.

Corrosion of gold-plated weights. Trudy VNIIM no.27:42-46 '55.  
(Weights and measures) (Gold plating) (MIRA 11:6)

SOV/58-59-9-20020

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 9, p 84 (USSR)

AUTHOR: Gordov, A.N , Krakhmal'nikova, G.A , Ergardt, N.N

TITLE: A Horizontal Furnace for Obtaining Temperatures up to  $1,500^{\circ}\text{C}$  in an Air Combustion-Chamber

PERIODICAL: Tr. Vses. n.-i. in-ta metrol., 1958, Nr 35(95) pp 92 - 94

ABSTRACT: The furnace can serve for the calibration of operating Pt-PtRh thermocouples up to  $1,500^{\circ}\text{C}$ . Fundamentally, it consists of two coaxial tubes. The inner tube (of  $\text{Al}_2\text{O}_3$ ) serves as the combustion chamber, while the outer tube (of  $\text{BeO}^{(2)}$ ) carries the heating winding (of Mo wire with a cross section of 0.2 mm), operating in an atmosphere of refined Ar, supplied under a pressure of 0.02 atm. The power of the heater is 5 kw, and the voltage of the alternating current is 220 V. The furnace provides heating up to  $1,500^{\circ}\text{C}$  for two hours. Temperature fluctuations in the center of the furnace do not exceed  $\pm 4^{\circ}\text{C}$  over a distance of 7 cm.

B.I. Pilipchuk

Card 1/1

BOYALSKIY, L.A.; GORDOV, A.N.; IOSEL'SON, G.L.; KANDYBA, V.V.; KIREHKOV,  
I.I.; KOVALEVSKIY, V.A.; KRAKHMAL'NIKOVA, G.A.; LAPINA, E.A.;  
TARAYANTS, K.G.

Using the photoelectric method for precise work in the field of  
optical pyrometry. Trudy VNIIM no.36:23-32 '58. (MIRA 11:11)  
(Pyrometry)

S/196/62/000/008/009/017  
EO32/E514

AUTHORS: Kirenkov, I.I. and Krakhmal'nikova, G.A.

TITLE: A study by the photoelectric method of the horizontal model of a black body at the temperature of solidification of gold

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.8, 1962, 2, abstract 8V8. (Tr. in-tov Kom-ta standartov, mer i izmerit, priborov pri Sov.Min.SSSR, 1961, no.51(111), 98-109)

TEXT: Describes the apparatus and the photoelectric method of brightness calibration of standard temperature lamps in various parts of the visible region of the spectrum. The measurements were carried out with the spectrometric apparatus СПК-1 (SPK-1) and the horizontal model of a black body. The brightness of the lamp was equalized with the brightness of the emitting cavity of the black body at the temperature of equilibrium between liquid and solid gold (1063°C). The current through the lamp was measured at the same time. The accuracy of the calibration is analysed and the possible experimental errors

Card 1/2

A study by the photoelectric ...

S/196/62/000/008/009/017  
EO32/E514

are discussed. The results of calculations of the various  
errors  $\Delta T^{\circ}\text{C}$  are given in a table.  
4 figures, 5 references.

ASSOCIATION: VNIIM, Leningrad

[ Abstractor's note: Complete translation.]

Card 2/2

S/115/62/000/005/001/006  
EO32/E414

AUTHORS: Krakhmal'nikova, G.A., Kirenkov, I.I.

TITLE: Spectropyrometric apparatus at VNIIM

PERIODICAL: Izmeritel'naya tekhnika, no.5, 1962, 18-19


TEXT: The spectropyrometric apparatus CП-4K (SP-4K) was designed for fundamental metrological work at high temperatures. A detailed description of it has been given previously by V.V.Kandyba, V.A.Kovalevskiy and G.L.Iosel'son (DAN SSSR, v.4, 1956, 108; Izmeritel'naya tekhnika, no.2, 1956) and V.Ye.Finkel'shteyn and N.G.Starunov (Pribory i tekhnika eksperimenta, no.3, 1960). It is based on the null-point modulation method of brightness equalization. It is being used to set up a temperature scale with a maximum possible accuracy. The sensitivity threshold in the spectral region 0.47 to 1  $\mu$  is 0.02 to 0.05° with a bandwidth of 0.01 to 0.03  $\mu$ , source temperature of 1063°C and a measuring-circuit time constant of 5 sec. The SP-4K apparatus incorporates a new modulator developed at KhGIMIP and described by V.A.Kovalevskiy (Pribory i tekhnika eksperimenta, no.3, 1959). Special steps were taken to

Card 1/2

Spectropyrometric apparatus ...

S/115/62/000/005/001/006  
E032/E414

exclude scattered radiation in the monochromator and in the external optics, and to ensure convenient and reliable adjustment of all the optical devices. These improvements are said to ensure the "required accuracy of standardization of the temperature scale".



Card 2/2

KIRENKOV, I.I.; FIDKHEVAL NIKOVA, G.A.

Spectrophotometer unit for plotting a temperature scale by means of the photoelectric method. Trudy Inst.Kem.stand. mer i izm.prib. no. 71:30-45 '62.

Absorption light filters used in temperature measurements in a wide spectral range. Ibid. 71:77 (1962) 17:16.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.



KRAKEMAL'NIKOVA, G.A.

Plotting a temperature scale by the pyrometric method in a wide spectral range. Trudy Inst Khim. Standartov, Seriya 1, no. 71: 46-61, 1963.  
(MIRA 17/63)

1. Vsesoyuznyy nauchno-issledovatel'skiy tsentr khimicheskoy metrologii im. D.I. Mendeleeva.

ROSEN, J. : KILPATRICK, G.A.

description of setting up a high-temp. cell using the  
photoelectric method. Nov. nauch.-tekhn. zhurn. Khim.  
no.3:25-31 1964 (ind. 15:2)

SKVORTSOVA, L.I.; KRAKHMAL'NIKOVA, G.Kh.; FASTOVSKAYA, R.M.

Shereshevskii's syndrome observed in patients with toxoplasmosis.  
Probl. endok. i gorm. 10 no.6:60-61 N-D '64. (MIRA 18:7)

1. Kafedra infektsionnykh bolezney (zav. - prof. L.K.Korovitskiy).  
kafedra akusherstva i ginekologii lechebnogo fakul'teta (zav. -  
prof. A.I.Malinin), kafedra gosital'noy terapii pediatricheskogo  
i stomatologicheskogo fakul'tetov (zav. - prof. A.A.Oks) Odesskogo  
meditsinskogo instituta imeni Pirogova i 1-ya Odesskaya gorodskaya  
infektsionnaya bol'nitsa (glavnyy vrach L.T. Zhidovlenko).

AUTHOR: Krakhmal'nikova, M. I. 50-58-3-7/22

TITLE: An Extraordinary Foehn on the Black Sea Coast of  
Caucasia (Isklyuchitel'nyy fen na Chernomorskom  
poberezh'ye Kavkaza)

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 3, p. 38 (USSR)

ABSTRACT: From April 15 to 17, 1957 a foehn of extraordinary strength was observed in the regions of Poti and Batumi. The following conditions contributed to the formation of the foehn winds in this period: Cyclones from the Mediterranean were displaced to the Black Sea and further toward north-east. Behind the Caspian Sea a powerful crest of anticyclones formed which contributed to the displacement of the dry flood from east to south-east. When crossing the mountain chains of Caucasasia the air masses warmed up adiabatically and consequently the temperature abruptly increased and the relative humidity decreased. From the east of the Mediterranean a high-altitude frontal zone passed. A powerful high-altitude crest shifted above the eastern regions of Asia Minor as well as above the Caucasus and also

Card 1/2

An Extraordinary Foehn on the Black-Sea Coast of Caucasia 50-58-3-7/22

extended to the southern regions of the Black Sea. The crest was directed to the region of the Caspian Sea and the Aral Sea. The heat advection at the heights developed coming from the regions of Mesopotamia and Arabia. In Batumi the air temperature on April 16 rose to 38,3°C and exceeded the absolute maximum of several years by 7,3°C. In Poti the air temperature on April 16 attained 35,1°C (2,0°C heigher than the absolute maximum of several years). The 24-hour amplitude of the air temperature on April 16 in Batumi was 23,9°C and in Poti 16,3°C. At the same time with the abrupt increase in air temperature a decrease in the relative humidity was observed. On April 16 at 1 p.m. the relative humidity in Batumi dropped to 8 % and in Poti to 24 %. The 24-hour amplitude of relative humidity in Batumi was 55 % and in Poti 20 %. During the foehn weak eastern winds prevailed in Batumi. In Poti strong east winds were observed which attained 17 m/sec. The strong winds in Poti were connected with orographic conditions of the region.

1. Wind--USSR 2. Atmosphere--Temperature 3. Meteorology

Card 2/2

KRAKHMALOV, Z.; UZHEGOV, G.

Work experience of the excavator operator I.F.Netaev. Sbor.mat. o nov.  
tekhn. v stroi. 15 no.7:6-9 J1 '53. (MLRA 6:7)  
(Excavation) (Netaev, I.F.)

BURBEL', A.N., inzhener; KRAKHMALOV, Z.A., inzhener.

Innovators of the Stalingrad hydropower development. Mekh.trud.rab. 7 no.9:  
34-35 S '53. (MLRA 6:9)

(Stalingrad hydroelectric power station) (Earthmoving machinery)

BURBEL', A.N., inzhener; KRAKHMALOV, Z.A., inzhener.

Driving of sheet piling in the Stalinabad hydroelectric power station project.  
Bul.stroi.tekh. 10 no.12:8-9 JI '53.

(MLda 0:8)

(Sheet piling)



ZVIAGINTSEV, A.M.; ZHAKH V.P. 1948.

Igniting the gas and... section of the... (1948)

1. Laboratoriya... naučno-issledovatel'skoy...

*Krakhmalyuk, P.F.*

PITIN, R.N.; MIRINGOF, N.S.; KRAKHMALYUK, P.F.

Results of cold tests in the gas producer No.1 at the Shatsk  
gasification station "Podzemgaz." Podzem.gaz.ugl. no.3:38-43 '57.  
(MIRA 10:11)

1. Institut goryuchikh iskopayemykh imeni G.M.Krzhinzhanovskogo  
Akademii nauk SSSR i Vsesoyuznyy nauchno-issledovatel'skiy i  
proyektnyy institut podzemnoy gazifikatsii ugley.  
(Coal gasification, Underground)

KRAKHMALYUK, P.F.; LEVANEVSKIY, V.S.; MIRINGOF, N.S.; NUSINOV, G.O.;  
PITIN, R.N.; FARBBEROV, I.L.

Results of the study of gas leakage from gas producer No.1 at  
the Shatskaya "Podzemgaz" Station. Podzem. gaz. ugl. no.3:  
23-29 '58. (MIRA 11:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut Podzemgaz i  
Institut goryuchikh iskopayemykh im. G.M. Krzhizhanovskogo AN  
SSSR.

(Moscow Basin--Coal gasification, Underground)

NUSINOV, G.O., doktor tekhn. nauk; MIRINGOF, N.S., kand. tekhn. nauk;  
BRUSHTEYN, N.Z., kand. tekhn. nauk; KRAKHMALYUK, D.F.

Hydraulic fracturing of a coal seam under an increased rate  
of water injection and an increased distance between boreholes  
on an experimental gas generator at Shatskoye station. Nauch.  
trudy VNIIPodzemgaza no.8:59-69 '62. (MIRA 16:6)

1. Laboratoriya gazifikatsii burykh ugley Vsesoyuznogo nauchno-  
issledovatel'skogo instituta podzemnoy gazifikatsii ugley.  
(Moscow Basin—Coal gasification, Underground)

KRAKHOTIN, N. P., Cand Agr Sci -- (diss) "Bees of the Kazakhstan Altay, their economicobiological nature, and the way to improve them." Alma-Ata, Mapping Enterprises of the Ministry of Agriculture Kazakh SSR, 1960. 20 pp; (Committee of Higher and Secondary Specialist Education under the Council of Ministers Kazakh SSR, Alma-Ata Zooveterinary Inst); 170 copies; price not given; (KL, 28-60, 163)

BERKOVSKIY, V.S.; GUN, G.Ya.; KRAKHT, V.B.; KRAKHT, N.G.

Investigating plastic flow in passes in conditions of plain  
strain. Izv.vys.ucheb.zav.; Chern. met. 8 no.4:123-127 '65.  
(MIRA 18.4)

I. Moskovskiy institut stali i splavov.

KRAKHT, S.V.; MEDVEDEV, S.V.; KOZ'MINSKAYA, Ye.I.

On the problems of outbreaks of tonsillitis. Voen.-med. zhur. no.9:  
57-60 S '51.

(MIRA 9:9)

(THROAT--DISEASES)

KRAKHT, S.V., podpolkovnik meditsinskoy sluzhby (Rostov-na-Donu)

Pathogenesis of primary tonsillitis. Vrach.delo no.11:1183-1186  
N '56. (MLRA 10:3)

(TONSILS--DISEASES)



KRAKHT, S.V.

Characteristics of faucial coccid bacteria in anginas and in normal subjects. Zhur.mikrobiol., epid. i immun. 27 no.8:30-31 Ag '56.

(MIRA 9:10)

1. Iz sanitarno-epidemiologicheskogo otryada SKVO.

(MICROCOCCUS PYOGENES,

pharynx, in normal subjects & tonsillitis (Rus))

(STREPTOCOCCUS,

pharynx, in normal subjects & tonsillitis (Rus))

(PHARYNX, bacteriology,

Micrococcus pyogenes & Streptoc. in normal subjects  
& tonsillitis (Rus))

(TONSILLITIS,

pharyngeal Micrococcus pyogenes & Streptoc. carriage in  
normal subjects & tonsillitis (Rus))

KRAKUT, S.V., podpolkovnik med. sluzhby; RYABKO, N.A., podpolkovnik med. sluzhby

Hygienic of military camps. Voen. med. zhur no.4:62-63 Ap '57  
(ARMED FORCES PERSONNEL, (MIRA 12:7)  
camps (Rus))

KRAKHT, S.V., podpolkovnik med.sluzhby

Common cold infections and their prevention. Voen.med.zhur. no.12:68-71  
D'57 (MIRA 11:5)

(COMMON COLD, prevention and control,  
(Rus))

ALEKSANDROV, N.I.; GEFEN, N.Ye.; YEGOROVA, N.B.; KREYNIN, L.S.; SERGEYEV,  
V.M.; MASLOV, A.I.; SMIRNOV, M.S.; KRAKHT, S.V.; BUDAK, A.P.;  
GEFEN, G.Ye.

Development of a method for aerosol immunization against typhoid  
fever and dysentery. Voen.-med. zhur. no.5:54-59 My '61.  
(MIRA 14:8)  
(TYPHOID FEVER) (DYSENTERY) (AEROSOLS)

KRAKHT, S.V., polkovnik meditsinskoy sluzhby, kand.med.nauk; KOTSAREV, V.N.,  
gvardii podpolkovnik meditsinskoy sluzhby

Atypical course in dysentery. Voenn.-med. zhur. no.5:60-61 My '61.  
(MIRA 14:8)  
(DYSENTERY)

KRAKHT, S.V., polkovnik med.sluzhby, kand.med.nauk

Preliminary results of aerogenic immunization against intestinal  
infections. Voen.-med.zhur. no.10:68-69 0 '61. (MIRA 15:5)

(TYPHOID FEVER) (DYSENTERY) (VACCINATION)

KRAKHT, S.V., polkovnik meditsinskoy sluzhby, kand.med.nauk; AMIKOV,  
M.S., mayor meditsinskoy sluzhby

Causes of repeated hospitalization of dysentery patients. Voen.-  
med. zhur. no.8:75-77'62. (MIRA 16:9)  
(DYSENTERY) (MEDICINE, MILITARY)

BERKOVSKIY, V.S.; GUN, G.Ya.; KRAKHT, V.B.; KRAKHT, N.G.

Investigating plastic flow in passes in conditions of plain  
strain. Izv.vys.ucheb.zav.; Chern. met., 8 no.4:123-127 '55.  
(MIRA 18:4)

1. Moskovskiy institut stali i splavov.



*KRAKIK, I.*

HUNGARY/Physical Chemistry - Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 20901

Author : I. Rusnak, K. Fukker, I. Krakik.

Inst : Academy of Sciences of Hungary.

Title : Polarographic Study of High Molecular Substances by  
Maximum Suppression Method.

Orig Pub : Acta chim. Acad. sci. hung., 1958, 9, No 1-4, 49-57

Abstract : A more detailed report on work published earlier  
(RZhKhim, 1956, 54683).

Card 1/1

KRAKINOVSKAYA, Ye. M.

"Development of the Theory of Physical Antisepsis in Russian Surgery."  
Sub 20 Nov 51, Central Inst for the Advanced Training of Physicians.

Dissertations presented for science and engineering degrees in Moscow  
during 1951.

SO: Sum. No. 480, 9 May 55.

1. KRAKINOVSKAYA, YE.M.
2. USSH (600)
4. Dobroslavin, Aleksei Petrovich, 1842-1889
7. Alakesi Petrovich Dobroslavin and the surgical clinic, Sov.zdrav. 12 no. 3, 1953.
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

KRAKINOVSKAYA, Ye.M., kandidat meditsinskikh nauk (Moskva)

N.I.Pirogov and the problem of prevention of surgical infection.  
Klin. med. 32 no.8:82-89 Ag '54. (MLRA 7:10)

(ANTISEPSIS AND ASEPSIS, history,  
in Russia, contribution of N.I.Pirogov)  
(PIROGOV, NIKOLAI IVANOVICH, 1810-1881)